No.



9200208

THE UNIVERSE STANTES OF ANTERICAL

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Incob Hartz Seed Company, Inc.

Colleges. There has been presented to the

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TUTLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT, VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF CIGHTEEN YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, UMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'H5088'

In Testimony Watereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 31st day of October in the year of our Lord one thousand nine hundred and ninety-four.

Aus

Kenneth H Evans

Commissioner

Plant Variety Protection Office Agricultural Marketing Service Clive Est Secretary of Agriculture

APPLICATION FOR PLANT VAR	OF AGRICULTURE ARKETING SERVICE	ТІОМ СЕРТІ	FICATE	Application is required in determine it a plant variety contilicate is to be issued (7 U.
(Instructions	on reverse)	-IION CERTI	ricale.	certificate is issued (7 U.S.C. 24
NAME OF APPLICANT(S) (as it is to appear on the Carificate)	*	Z. TEMPOI	RARY DESIGNATION OR	J. VARIETY NAME
JACOB HARTZ SEED CO., INC.	.1.	Н85-	874	Н5088
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZP) P.O. BOX 946		5. PHONE	Include area code)	FOR OFFICIAL USE ON
STUTTGART, AR 72160	•	(507)		PVPO NUMBER
		(501)	673-8565	9200208
	***			F Date
6. GENUS AND SPECIES NAME	7. FAMILY NAME	(Bolonical)		June 10, 19
GLYCINE MAX	1			6 4:00 □AM
8. CROP KIND HAME (Common Name)	LEGUM	INOSEA	<u> </u>	F Filing and Examination F
SOYBEAN	₹¢.	OCTOBI	TR 1990	E 2/150.00
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF OR	GANIZATION (Corporal	ion, parlnership, assoç	istion, stc.)	a June 10, 199
CORPORATION		• •		E Certificate Fee:
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF MOORP	ORATION	: 250.00
DELAWARE		1984		V Daile
13. HAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY,	70.000000000000000000000000000000000000			5 Dept. 30, 19
d. Schibit O, Additional Description of Variety. Exhibit E, Statement of the Basis of Applicant's Owner Seed Sample (2,500 viable untreated seeds). Date Se G. Filing and Examination Fee (\$2,150) made payable to	ed Sample mailed to	ted States		
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE Protection Act. YES (# "YES." answer items 16 and 17	below) 🔀 N	E ONLY AS A CLASS O ILS I NOV. 199 Y ON THO Ship to Hom		section 83(a) of the Plant Variety
 COES THE APPLICANTIST SPECIFY THAT THIS VARIETY BE LIMITED A MUMBER OF GENERATIONS? 	STO 17. F	ES" TO STEM 16, WHIC	H CLASSES OF PRODUC	TION BEYOND BREEDER SEED?
☐ YES 😡 NO	Г	FOUNDATION	REGISTE	RED CERTIF
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE				
VES W YES Monagh Plant Variety Protection Act	Patent Act. G	ive date:		
19 HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR	MARKETED NI THE	OR OTHER CO.		
YES (II "YES," give names of countries and dates)		. S. O OFFICE COUNTRI	Lo [*]	
₩				
		-		
20 The applicant(s) declare(s) that a viable sample of basic request in accordance with such regulations as may be an	seeds of this variety	will be furnished	with the application	and will be replepished up
The undersigned applicant(s) is (are) the ownerst of the	pricapte.			•
				i) that the variety is distinant that the same of t
	rein can jeopardize	protection and res	ult in penalties	• • • • • • • • • • • • • • • • • •
SIGNATURE OF APPLICANT (Owner(S))	 			DATE
Cuetos Well ins	Brea	ton and chief	perener	, , , , , , , , , , , , , , , , , , ,
SCHATIGE OF ADDITION OF	Propre	ten Douhain	and letter-	June 5, 1992
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY	OR TITLE 7	uer	DATE

DATE

INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed Exhibits A,B,C,E; (3) at least 2,500 viable untreated seeds; (4) check, drawn on a U.S. bank, payable to "Treasurer of the United States" in the amount of \$2,150 (\$250 filing fee and \$1,900 examination fee). (See section 180.175 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for 30 days, then returned to the applicant as unfilled. Mail application and other requirements to: Plant Variety Protection Office, AMS, USDA, Rm. 500, NAL Building, 10301 Baltimore Blvd., Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the Application are self-explanatory unless noted below. Corrections on the Application form and Exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a Certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$250 for issuance of the Certificate.

Plant Variety Protection Office Telephone: 301/344-2518-

<u>ITEM</u>

- 9. Give the date when there has been at least a tentative determination that the variety has been sexually reproduced with recognized characteristics, whether or not the novelty of those characteristics has been determined. [See section 41(d) of the Plant Variety Protection Act (Act).]
- 14a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability. (See sections 41 and 52 of the Act.)
- 14b. Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons which clearly indicate novelty.
- 14c. Exhibit C forms are available from the PVPO; specify crop kind. Fill in the Exhibit C (Objective Description of Variety form) to describe your variety.
- 14d. Optional additional characteristics and/or photographs: Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 14e. Section 52(4) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. The applicant may be the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.
- 15. If "Yes" is specified (seed of this variety be sold by variety name only as a class of certified seed), the applicant may NOT reverse this affirmative decision after the variety has either been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified the applicant may change the choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 19. See sections 41 (i, j) and 42 of the Act and section 180.7 of the Regulations and Rules of Practice for eligibility requirements.

NOTES:

It is the responsibility of the applicant/owner to keep the PVPO informed of any change of address or change of ownership or assignment during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment is \$25. [See section 101 of the Act, and sections 180.130, 180.131, 180.132, and 180.175(h) of the Regulations and Rules of Practice.]

To avoid conflict with other variety names in use, the applicant should check the variety names proposed by contacting: Seed Branch, AMS, USDA, Rm. 213, Building 306, Beltsville Agricultural Research Center -- East, Beltsville, MD 20705. Telephone: 301/344-2089.—

504-8089

EXHIBIT A ORIGIN AND BREEDING HISTORY H5088

SUMMER 1982 ORIGINAL CROSS MADE AT STUTTGART, ARKANSAS.

CROSS NUMBER WAS 82165

PARENTS = $H76-558 \times H79-2410$

H76-558 = FORREST X MACK

 $H79-2410 = D70-3115 \times L70-4629$

 $D70-3115 = D64-4936 \times PICKETT 71$

 $D64-4636 = HILL \times D58-3311$

 $D58-3311 = JACKSON (4) \times D49-2491$

 $D49-2491 = S100 \times CNS$

L70-4629 = L12 X L62-1579

L12 = CLARK ISOLINE WITH Rps1, rpx, AND YELLOW HILUM

L62-1579 = CLARK X T204 (L48-101)

T204 = T136 X T122

T136 = PI88.351 \times ROKUSUN

T122 = UNKNOWN

WINTER 1982-83 F1 ADVANCED TO F2 IN GREENHOUSE AT STUTTGART, AR.

SUMMER 1983 F2 ADVANCED TO F3 BY MODIFIED SINGLE SEED DESCENT AT STUTTGART, AR.

WINTER 1983-84 F3 AND F4 ADVANCED TO F5 BY MODIFIED SINGLE SEED DESCENT IN BELIZE, C.A.

SUMMER 1984 F5 GROWN AT STUTTGART, AR.

SUMMER 1985 F6 GROWN AT STUTTGART, AR., IN PLANT ROWS, SELECTED ROW DESIGNATED 874.

NOW DEDICHMIED 0/4.

SUMMER 1990 GREW F2 ACRE INCREASE AT STUTTGART, AR.

WINTER 1990-91 GREW A 30 ACRE INCREASE IN COSTA RICA, C.A.

SUMMER 1986-91 YIELD TESTED IN HARTZ SEED COMPANY TEST IN AR, MO, TN, LA, MS, GA AND SC, AND SCREENED FOR DISEASE AND NEMATODES, AT STUTTGART, AR.

SUMMER 1991 GREW SEED INCREASE, STUTTGART, AR.

EVIDENCE OF STABILITY - H5088 is stable and uniform within commercially acceptable limits as indicated by observation of three years of disease screening trials, yield tests and seed increase plots.

KINDS OF VARIANTS - PLANTS WITH OVATE LEAFLETS AND TAN POD WALLS WITH EITHER WHITE OR PURPLE FLOWERS OCCUR IN A FREQUENCY OF ABOUT 0.002% (6 SEED PER POUND). PLANTS WITH LANCEOLATE LEAFLETS, BROWN POD WALLS AND GRAY PUBESCENCE WITH WHITE OR PURPLE FLOWERS PRODUCING SEED WITH BUFF OR BROWN HILA OCCUR AT A FREQUENCY OF ABOUT 0.002%.

EXHIBIT B

NOVELTY STATEMENT

To my knowledge 'H5088' most closely resembles 'FORREST'.

Differences include:

'H5088' has lanceolate leaflets and brown pod walls while 'Forrest' has ovate leaflets and tan pod walls.

EXHIBI (Soybe

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE

PLANT VARIETY PROTECTION OFFICE BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY SOYBEAN (Glycine max L.)

·		30186	AIV (GIYONE MAX L.)			
NAME	OF APPLICANT(S) B HARTZ SEED CO.,	TNO	TEMPORARY DESIGNATION	N VARIETY NAME		
CURTI	S WILLIAMS		н85-874	Н50	88	
ADDRE	ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code)			FOR OFFICIAL USE ONL		
	GART , AR 72160			PVPO NUMBER		
	· ·			£	0208	
Choose	the appropriate response which	h characterizes the va	riety in the features describe	d below. When the n	umber of significant	
an you	SUPACE IN TEMEL CUSTO FUE DRIME	per of boxes provided	. Dlace a zero in the first hos	when number is 0 or	ilera (n. e. O. l. o.	
Starten	characters * are considered fur are considered fur are considered for the characters of the constant of the characters o	indamental to an adeq	uate soybean variety descrip	tion. Other characte	rs should be describe	
	SHAPE:				·	
1. SEEL	SARCE:	a 0	\mathbf{O}			
2		L u	-		÷	
	1 = Coharinal (1 84) 1 (T Tau	3 4 3 1				
	1 = Spherical (L/W, L/T, and T/W 3 = Elongate (L/T ratio > 1.2; T/	ratios = < 1.2) W = < 1.2)	2 = Spherical Flattene	d (L/W ratio > 1.2; L/T	ratio = < 1.2)	
			4 = Elongate Flattener	d (L/Tratio > 1.2; T/W	> 1.2)	
2. SEED	COAT COLOR: (Mature Seed)					
1	1 = Yellow 2 = Green	3 = Brown	4 = Black , 5 = Othe	r (Specify)		
3. SEED	COAT LUSTER: (Mature Hand SI	helled Seed)	•			
	1 = Dull ('Corsoy 79'; 'Braxton')	9-01: 44.				
لكا	July 75, Blacker,	2 = Shiny ('Nebso	Y"; "Gasoy 17")			
4 CEED	SIZE: (Mature Seed)					
4. SEED .	SIZE: (Mature Seed)					
1 4	Grams per 100 seeds					
5. HILUM	COLOR: (Mature Seed)					
	•					
6	1 = Buff 2 = Yellow	3 = Brown 4	= Gray 5 = Imperfect BI	ack 6 = Black	7 = Other (Specify)	
			•	• • • • • • • • • • • • • • • • • • • •	- Other (open)	
6. COTYL	EDON COLOR: (Mature Seed)					
ا ليا	l = Yellow 2 = Green					
7. SEED P	ROTEIN PEROXIDASE ACTIVIT	Υ:				
	* Low 2 = High		• .			
	Z - Tiigii					
g SECO B	ROTEIN ELECTROPHORETIC B					
o. SEED F	MOTEIN ELECTROPHORETIC B.	AND:				
1	≈ Type A (SP1 ^a)	2 = Type B (SP1 ^b)				
		,, = ,				
HYPOCO	OTYL COLOR:			·		
			- '			
1 .1 1	= Green only ('Evans'; 'Davis')	2 = Green with (bronze band below cotyledons (Woodworth's 'Tracy'l		
	= Light Durmle heless are deduced	Beeton's Pickets 7111				
	= Light Purple below cotyledons (
	Dark Purple extending to unifoli	iate leaves ('Hodgson'; 'C	oker Hampton 266A')			
	= Dark Purple extending to unifoli	iate leaves ('Hodgson'; 'C	oker Hampton 266A*)			
4	= Dark Purple extending to unifoli	iate leaves ('Hodgson': 'C	oker Hampton 266A')			

FORM LMGS-470-57 (5-83)

(Edition of 7.82 is absolute)

11. LEAFLET SIZE:		
2 1 = Small ('Amsoy 71'; 'A5312') 3 = Large ('Crawford'; 'Tracy')	2 = Medium ('Corsoy 79'; 'Gasoy 17')	9200208
12. LEAF COLOR:		
1 = Light Green ('Weber'; 'York') 3 = Dark Green ('Gnome'; 'Tracy')	2 = Medium Green ('Corsoy 79'; 'Braxton')	
★ 13. FLOWER COLOR:		
1 = White 2 = Purple	3 = White with purple throat	
★ 14. POD COLOR:		
2 1 = Tan 2 = Brown	3 = Black	
★ 15. PLANT PUBESCENCE COLOR:		
2 1 = Gray 2 = Brown (Tawny)	· •	
16. PLANT TYPES:		
1 = Slender ('Essex'; 'Amsoy 71') 3 = Bushy ('Gnome'; 'Govan')	2 = Intermediate ('Amcor'; 'Braxton')	
★ 17. PLANT HABIT:		
1 = Determinate ('Gnome'; 'Braxton') 3 = Indeterminate ('Nebsoy'; 'Improved Peli	2 = Semi-Determinate (Will') ican')	
* 18. MATURITY GROUP:		
0 8 1 = 000 2 = 00 3 = 0 9 = VI 10 = VII 11 = VIII	4=I 5=II 6=III 7=IV 12=IX 13=X	8 = V
★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Se	usceptible: 2 = Resistant	
BACTERIAL DISEASES:		
+ []		
Bacterial Pustule (Xanthomonas phaseoli var.	. sojensis)	
[] October of the search of t		
★ Wildfire (Pseudomonas tabaci)	• .	
FUNGAL DISEASES:		
★ 1 Brown Spot (Septoria glycines)		
Frogeye Leaf Spot (Cercospora sojina)	•	
Race 1 Race 2 Race	Hace 5 2 Oth	er (Specify)
Target Spot (Corynespora cassiicola)		CE NOT DETERMINED
Downy Mildew (Peronospora trifoliorum var.)	manshurica)	
Powdery Mildew (Microsphaera diffusa)		
★ 0 Brown Stem Rot (Cephalosporium gregatum)		
2 Stem Canker (Diaporthe phaseolorum var. caul	livora)	/

FORM (MGS-470-57 (6-82)

DISCUSE REMUTION: (Enter 0 = Not To	sted; 1 = Susceptible; 2 = Resistant) (Contin	ued)
FUNGAL DISEASES: (Continued)		9200208
Pod and Stem Blight (Diaporthe)	haseolorum var; sojaej	
O Purple Seed Stain (Cercospora kik	uchii)	
0 Rhizoctonia Root Rot (Rhizoctor	ia solani)	
Phytophthora Rot (Phytophthora	megasperma var. sojae)	·
★ 2 Race 1 2 Race 2 0 Race 8 0 Race 9	1 Race 3 1 Race 4 0 1 Other (Specify) RACE 16,	Race 5
VIRAL DISEASES:		
Bud Blight (Tobacco Ringspot Vin	is)	
O Yellow Mosaic (Bean Yellow Mosai	: Virus)	
Cowpea Mosaic (Cowpea Chlorotic	Virus)	
Pod Mottle (Bean Pod Mottle Virus		
★ 0 Seed Mottle (Soybean Mosaic Virus) 	
NEMATODE DISEASES:		
Soybean Cyst Nematode (Heteroder	alveines)	
★ 0 Race 1 0 Race 2		Other (Specify) RACE 9, RACE 14
0 Lance Nematode (Hoplolaimus Colo		Otter (Specify)
Southern Root Knot Nematode (Me	oidogyne incomisal	
Northern Root Knot Nematode (Mei	+ N	
Peanut Root Knot Nematode (Melois		
Reniform Nematode (Rotylenchulus		
OTHER DISEASE NOT ON FORM		
	quelity).	
20. PHYSIOLOGICAL RESPONSES: (Enter 0 = 1	lot Tested; 1 = Susceptible; 2 = Resistant)	
Iron Chlorosis on Calcareous Soil		
Other (Specify)		
21. INSECT REACTION: (Enter 0 = Not Tested;		
0 Mexican Bean Beetle (Epilachna varive		• •
Potato Leaf Hopper (Empoasca fabae)		
Other (Specify)		
22. INDICATE WHICH VARIETY MOST CLOSEL	/ PECTADA DO TOMO	
CHARACTER NAME OF	(ADJETT)	
Plant Shape	UITATACIEN	NAME OF VARIETY
Leaf Shape	Seed Coat Luster Seed Size	
Leaf Color	Seed Shape	
Leaf Size	Seed Snape Seedling Pigmental	ing
		,
FORM LMGS-470-57 (6-83)		

VARIETY	NO. OF PLANT		CM PLANT	ANDARD VARIETY: Paired Comparison Data			9200208		
	DAYS LODGING MATURITY SCORE	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100	NO.		
		SCORE	HEIGHT	CM Width	CM Length	X Protein	× Oii	CEEDS	SEEDS/
Submitted	129	1.7	61		,	41.1	23.2	13.9	3-4
CHESON									
Name of Similar Variety	127	1.1	56			41.0	23.9	15.4	2-3

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

- 1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
- 2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
- 3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
- 4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

EXHIBIT E

H5088

BASIS OF APPLICANTS OWNERSHIP

Jacob Hartz Seed Company, Incorporated, Stuttgart, Arkansas established a Plant Breeding Program in 1972 for the purpose of developing, releasing, and maintaining stocks of soybean varieties developed by its Plant Breeding Program.

Dr. Curtis Williams, Plant Breeder, was licensed to breed soybeans by the Arkansas State Plant Board, December 9, 1977. Dr. Williams and co-workers developed and tested this variety in trials at Stuttgart, Arkansas, and outlying locations.

On April 23, 1983, Jacob Hartz Seed Company, Inc., was purchased by HybriTech Seed International, Inc., a wholly owned subsidiary of Monsanto, St. Louis, Missouri. Jacob Hartz Seed Company, Inc., was originally incorporated in 1948 in the state of Arkansas. In 1984 Jacob Hartz Seed Company, Inc., merged with the Monsanto-West Africa., Inc., a Delaware Corporation. Jacob Hartz Seed Company, Inc., is the present name of the merged corporation which is a Delaware corporation.

Dr. Curtis Williams is employed by Jacob Hartz Seed Company, Inc. By agreement between employee and Jacob Hartz Seed Company, Inc., all rights to any discovery, development or invention made by an employee are assigned to the company. No rights to the development of this variety are retained by the employee.